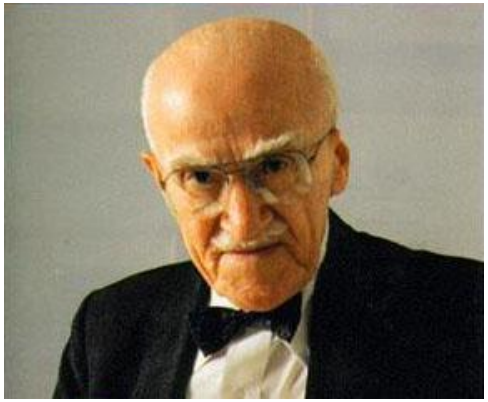
Improving Medical Performance

(Juran Trilogy-Risk Management –Swiss Cheese Model)



Lecture 4

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ILO's

<u>By the end of this session, participants should be able to:</u>

- ❑ Identify the components of Juran's Trilogy:
  - ➢ Quality Planning
  - ➢ Quality Control &
  - ➢ Quality Improvement
- ❑ Identify Patient safety importance .
- ❑ Surgical safety checklist
- ❑ Swiss Cheese Model

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Joseph Juran

- Joseph Juran's background was in engineering and law.
- He followed Deming to Japan after World War II, emphasizing the key role of top organizational leadership and the quality process in the organization .
- Juran's Trilogy is analogous to certain familiar financial processes.

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What is Juran Trilogy - Parallels Finance

Quality and Finance Parallels		
Trilogy Processes		Financial processes
Quality planning	<>	Budgeting
Quality control	<>	Cost control; expense control
Quality improvement	<>	Cost reduction; profit improvement

Source: Adopted from Juran, J. M. (August 1986). "The quality trilogy: A universal approach to managing for quality". Quality Progress, 19(8), 19-24

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What is Juran Trilogy
- Quality Defined

“ Fitness for use “

- 1. Quality consists of those service /product features that meet customer requirements
- 2. ‘Quality consists of freedom from deficiencies.’

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What is Juran Trilogy

- The Trilogy consists of three sequential and logical groups of activities:
  - Quality Planning, Quality Control, and Quality Improvement.
- All three processes are universal
  - Applied to a particular process
  - Performed by top management or by middle management

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Juran's Quality Trilogy

Questioning which of the quality trilogy is most important is similar to asking which leg of a stool is most important. Without all three, the stool (and the quality system) cannot function effectively.

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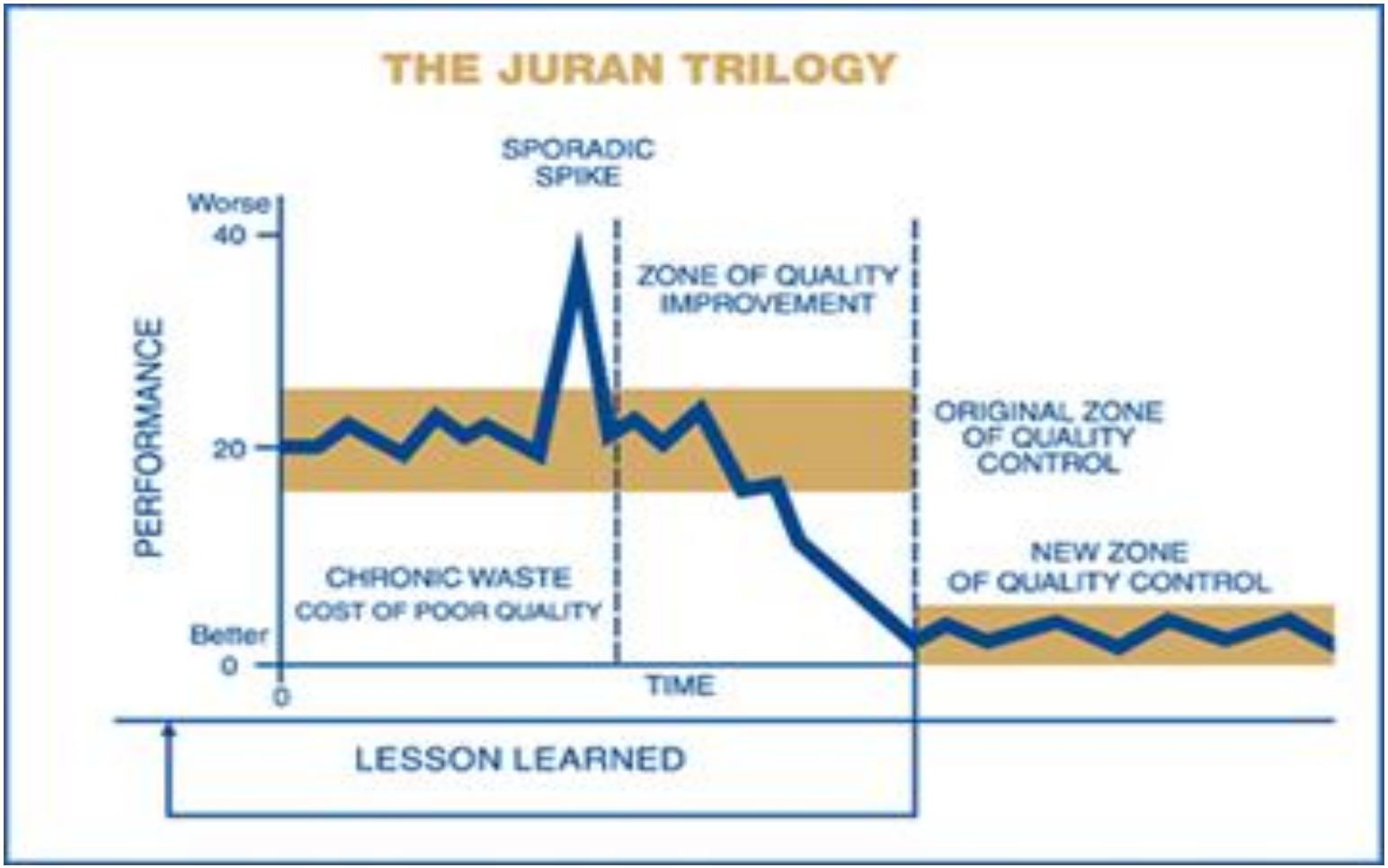

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Quality Planning involves :

- Identifying customers, both internal and external
- Determining their needs
- Specifying the service features that satisfy those needs at minimum cost.
- Designing the processes that can reliably produce those features.
- Proving that the process can achieve its goals under operating conditions.

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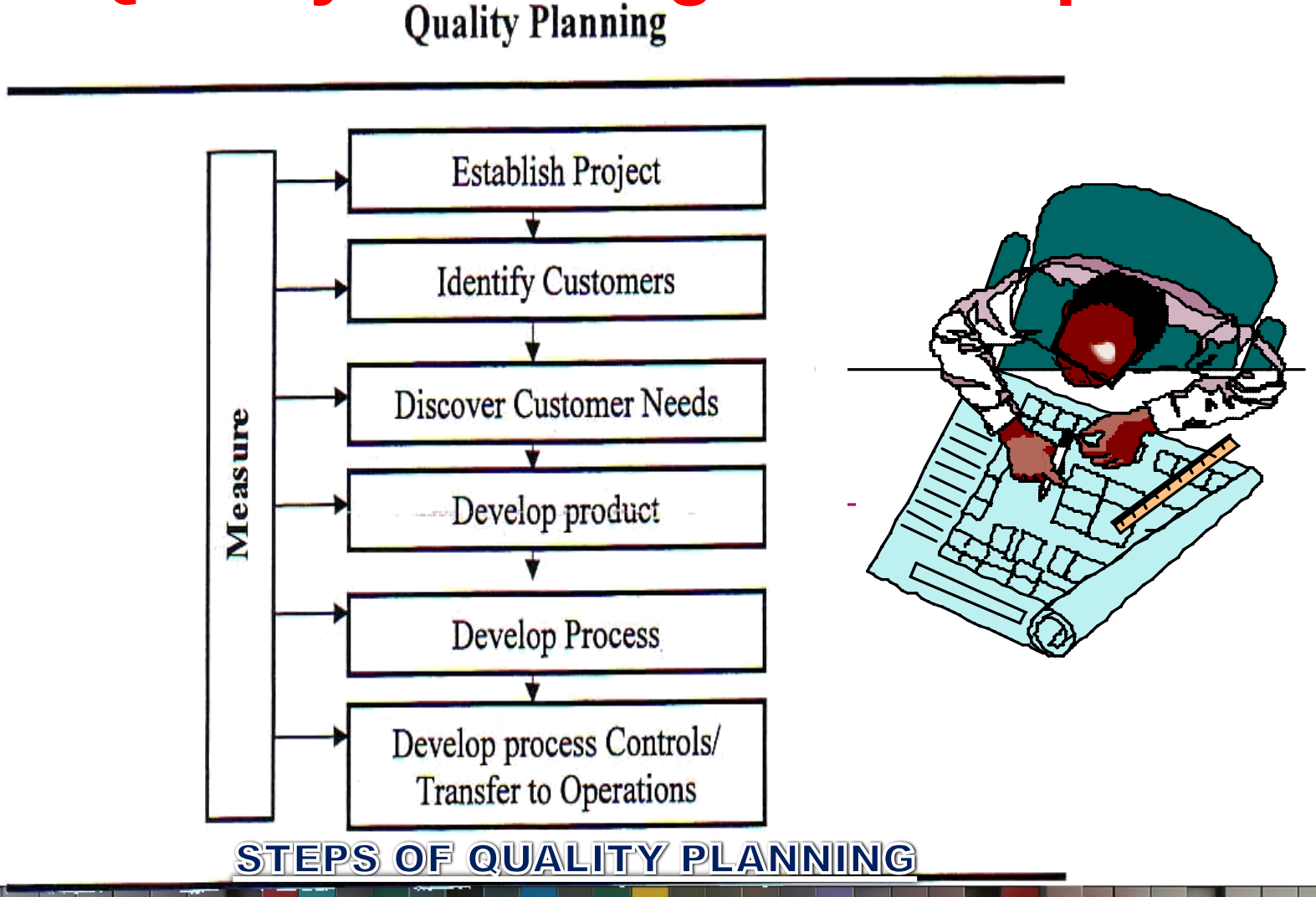
Quality Planning Roadmap



STEPS OF QUALITY PLANNING

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Step 1
Establish the project

1- Identify project

2- Establish project mission

3- Establish Quality Planning Team

4- Verify mission

5- Plan the project

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Step 2
Identify Customers

1- Construct high level & Detailed flow diagrams

2- Create list of all external customers

3- Create list of all internal customer

4- Prioritize customer lists

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Step 3
Discover
Customer Needs

1- plan to collect customers' needs

2- collect list of customers' needs in their language

3- Examine and prioritize customers' needs

4- Translate their needs into your language

5- Establish units of measurement

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Step 4

Developproduct/Service

1- Group together related customers' needs

2- Determine methods for identifying product features

3- Select high level product features and goals

4- Develop detailed product features and goals

5- Optimize product features and goals

6- Set and publish final product features and goals

7- Set and publish final product design

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Step 5

Develop Process

1- Review service featuresgoals

2- identifying operating conditions

3- Collect known information on alternative processes .

4- Select general process design

5- Identify process features and goals

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Step 6

Develop Process Controls/Transfer to Operations

1- Identify controls needed

2- Design feedback loop

3- Plan for transfer to operation

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What of the following will need quality improvement or quality planning :

1-The need to identify and eliminate a specific product or process defect will need (…….)

2-A product or process possessing so many multiple significant deficiencies will need. (…….)

3-No standard process will need. (…….)

4-The need to discover unknown customers and customer needs will need. (…….)

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B-The six steps of quality planning are :

1……

2……

3……

4 ……

5……

6……

C-Quality planning projects primarily come from the following sources:

1……

2……

3……

4……

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D-…… Roles are:

a. Supporting project teams.
b. Nominating and selecting projects.
c. Selecting teams.
d. Setting quality goals.
e. Monitoring progress

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Explanation of Juran Trilogy Tool -- Quality Planning

- **Quality Planning**: Setting some objectives and defining the means to meet those objective.
- **Quality Planning Road Map :**
  - Identify the customers – both internal and external.
    - Significance to the business, operations, profits, etc. **(Pareto analysis)**
  - Determine customer needs
    - **Tools to discover customer needs** -- flowcharts, surveys, interviews, etc.
    - Interpret the needs and put them **into the language of the organization.**

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Explanation of Juran Trilogy Tool -- Quality Planning, Cont.

- **Quality Planning Road Map, Cont.**
  - Develop Service features to meet customer needs
    - Customers (buyers), our needs (supplier), competition
  - Develop processes to produce the product features
    - Cost effectively for both the supplier and the customer.
  - Prove the process
    - Meeting the quality goals under operating conditions
  - Transfer the process to the operational area

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Explanation of Juran Trilogy Tool -- Quality Control

- **Quality Control (QC):** "Quality control is the **regulatory process** through which we measure actual quality performance, compare it with quality goals, and act on the difference" (Juran, 1988)

- **Define the control – what to control**
  - Units of measurement (e.g. hours spent, fuel efficiency, number of errors, etc.)
  - Specific measurement (e.g. X number of errors, etc.)
  - Standard of performance (against which to measure any deviations)

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Explanation of Juran Trilogy Tool -- Quality Control, Cont.

- **Measure actual operating performance**
  - **Different sensors** for collecting data
    - Human sensors (e.g. inspectors)
    - Machine sensors (e.g. data trackers, recorders, etc.)
- **Compare actual performance to goals**
  - Tools: control charts, trend analysis, correlation analysis, control reports
- **Act on the difference(s)** – eliminate the causes for sporadic spikes and chronic waste.

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Quality Control involves:

- Choosing control subjects
- Choosing units of measurement
- Establishing a measurement procedure
- Measuring
- Interpreting differences between measurement and goal.
- Taking action to correct significant differences

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Explanation of Juran Trilogy Tool -- Quality Improvement

- **Quality Improvement (QI):** "The organized creation of beneficial change; the attainment of unprecedented levels of performance." (Gibbons, 1994). Prove the need for improvement
  - **A quality council:**
    - Composition -- upper management or the senior leadership group
    - Topics -- policies, measures of performance, project and team selection, resources, follow-up, recognition & rewards
- Identify specific projects for improvement
- Select appropriate project team

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Explanation of Juran Trilogy Tool -- Quality Improvement, Cont.

- Charter the project team activities
- Provide recognition for the team
- Provide rewards for quality and quality improvement
- Track and follow-up with improvements

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Quality Improvement involves :

- Prove the need for improvement
- **Identify specific projects for improvement**
- **Organize to guide the projects**
- **Organize for diagnosis -- discovery of causes**
- **Diagnose the causes**
- **Provide remedies**
- **Prove that the remedies are effective under operating conditions**
- **Provide for control to maintain the gains.**

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Summary

- **Juran Trilogy**: A systematic and comprehensive system for break-through quality improvements
- **Quality Defined**: meet customer needs and freedom from deficiencies
- **Trilogy Components**
  - ✓ **Quality Planning** – discover customer needs and deficiencies and design adequate processes
  - ✓ **Quality Control** -- compare actual performance to goals and take action on the differences
  - ✓ **Quality Improvement** -- the attainment of unprecedented levels of performance

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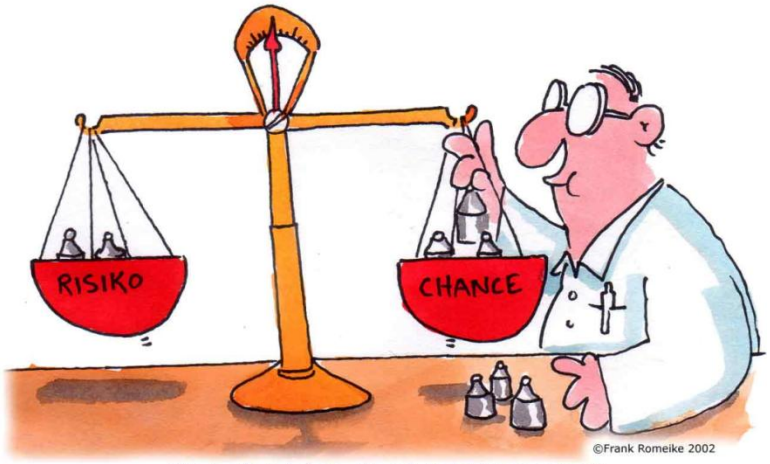
Risk Management Program :

"Quality is the optimal achievement of therapeutic benefit and avoidance of risk and minimization of harm".

Joint Commission



Wie so oft im Leben, gilt auch im Risikomanagement:
Die gesunde Balance muss her.

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Murphy's Law:

- *"If something can go wrong, it will*".

  It implies the need for anticipation.

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Patient Safety

Although creating

a culture of safety

is important,

Creating

a culture of systems

is a more fundamental challenge.

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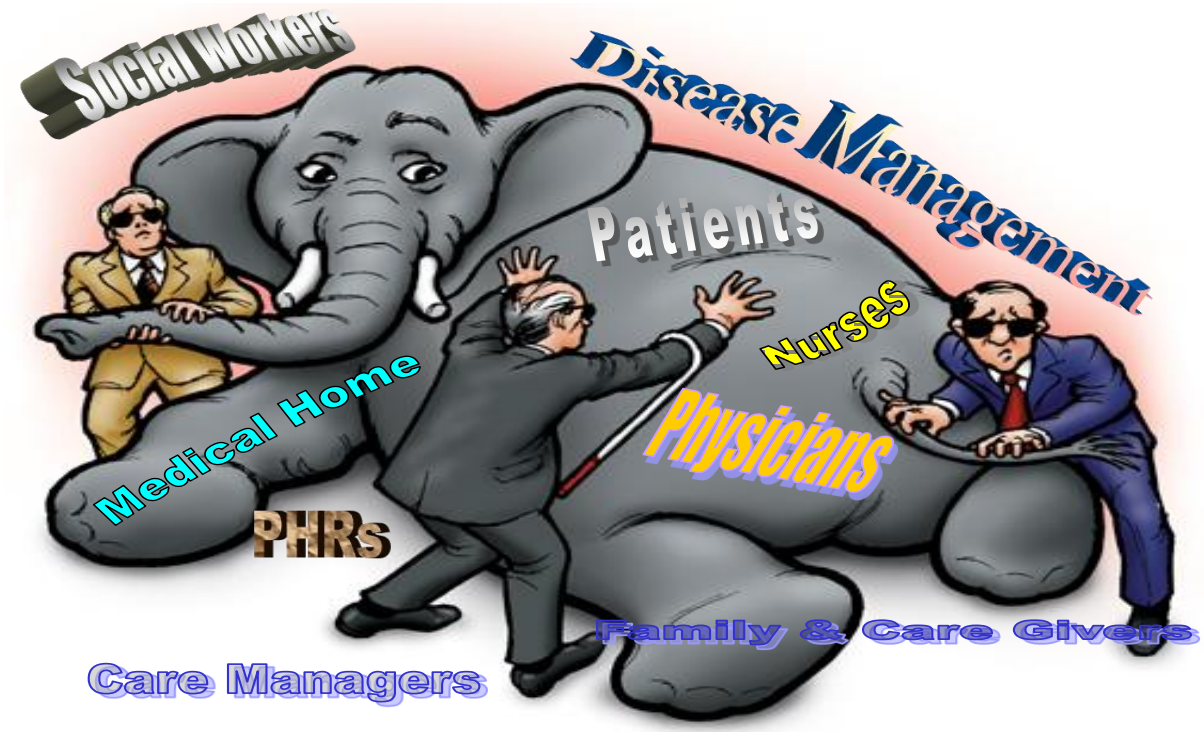
Coordination of SAFE Care



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PATIENT'S NAME

PAT.DATE OF BIRTH

وزارة الصحة
أمانة المراكز الطبية المتخصصة
مستشفى شرق المدينة

SURGICAL SAFETY CHECKLIST

Before induction of anaesthesia

SIGN IN

- ☐ **PATIENT HAS CONFIRMED**
  - IDENTITY
  - PROCEDURE
  - CONSENT
- ☐ **SIT MARKED/NOT APPLICABLE**
- ☐ **ANAESTHESIA SAFETY CHECK COMPLETED**
- ☐ **PULSE OXIMETER ON PATIENT AND FUNCTIONING**

DOES PATIENT HAVE A:
KNOWN ALLERGY?
- ☐ NO
- ☐ YES

DIFFICULT AIRWAY/ASPIRATION RISK
- ☐ NO
- ☐ YES, AND EQUIPMENT/ASSISTANCE AVAILABLE

RISK OF > 500 ML BLOOD LOSS
(7ML/KG IN CHILDREN)?
- ☐ NO
- ☐ YES, AND ADEQUATE INTRAVENOUS ACCESS AND FLUIDS PLANNED

Before skin incision

TIME OUT

- ☐ **CONFIRM ALL TEAM MEMBERS HAVE INTRODUCED THEMSELVES BY NAME AND ROLE**
- ☐ **SURGEON, ANAESTHESIA PROFESSIONAL AND NURSE VERBALLY CONFIRM**
  - PATIENT
  - SITE
  - PROCEDURE

ANTICIPATED CRITICAL EVENTS
- ☐ **SURGEOE REVIEWS:** WHAT ARE THE CRITICAL OR UNEXPECTED STEPS, OPERATIVE DURATION, ANTICIPATED BLOOD LOSS?

- ☐ **ANAESTHESIA TEAM REVIEWS:** ARE THERE ANY PATIENT-SPECIFIC CONCERNS?

- ☐ **NURSING TEAM REVIEWS:** HAS STERILITY (INCLUDING INDICATOR RESULTS) BEEN CONFIRMIDED? ARE THERE EQUIPMENT ISSUES OR ANY CONCERNS?

HAS ANTIBIOTIC PROPHYLAXIS BEEN GIVEN WITHIN THE LAST 60 MINUTES?
- ☐ YES
- ☐ NOT APPLICABLE

IS ESSENTIAL IMAGING DISPLAYED?
- ☐ YES
- ☐ NOT APPLICABLE

Before Patient Leaves operating room

SIGN OUT

BEFER SURGICAL WOUND CLOSURE

NURES VERBALLY CONFIRMS WITH THE TEAM:
- ☐ THE NAME OF THE PROCEDURE RECORDED
- ☐ **THAT INSTRUMENT, SPONGE AND NEEDLE COUNTS ARE CORRECT** (OR NOT APPLICABLE)
- ☐ **HOW THE SPECIMEN IS LABELLED** (INCLUDING PATIENT NAME)
- ☐ **WHETHER THERE ARE ANY EQUIPMENT PROBLEMS TO BE ADDRESSED**

AFTER SKIN CLOSURE
- ☐ **SURGEON, ANAESTHESIA PROFESSIONAL AND NURES REVIEW THE KEY CONCERNS FOR RECOVERY AND MANAGEMENT OF THIS PATIENT**

SURGEON

ANAESTHESIA PROFESSIONAL

NURES

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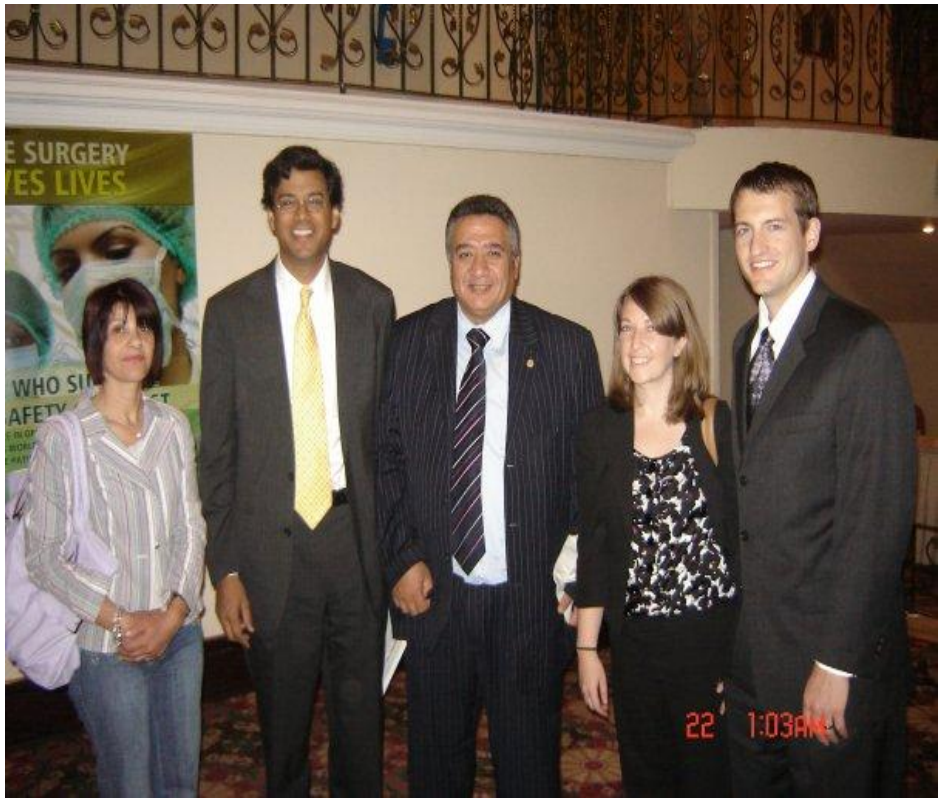
Prof. Dr Atul Gwande, Amman 2008



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Main responsibilities of the "Quality Council" in a healthcare organization include the following EXCPET

a. Fostering teamwork

b. Implementing performance improvement (PI) projects.

c. Providing necessary resources for PI efforts.

d. Formulating QI policies.

Which of the followings describe “Surgical safety Checklist “?

a. Sign out, time out , sign in

b. Sign in , sign out , time out

c. Time out, sign in , sign out

d. None of the above.

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Extract the Different Issues that could cause HARM in the coming picture :

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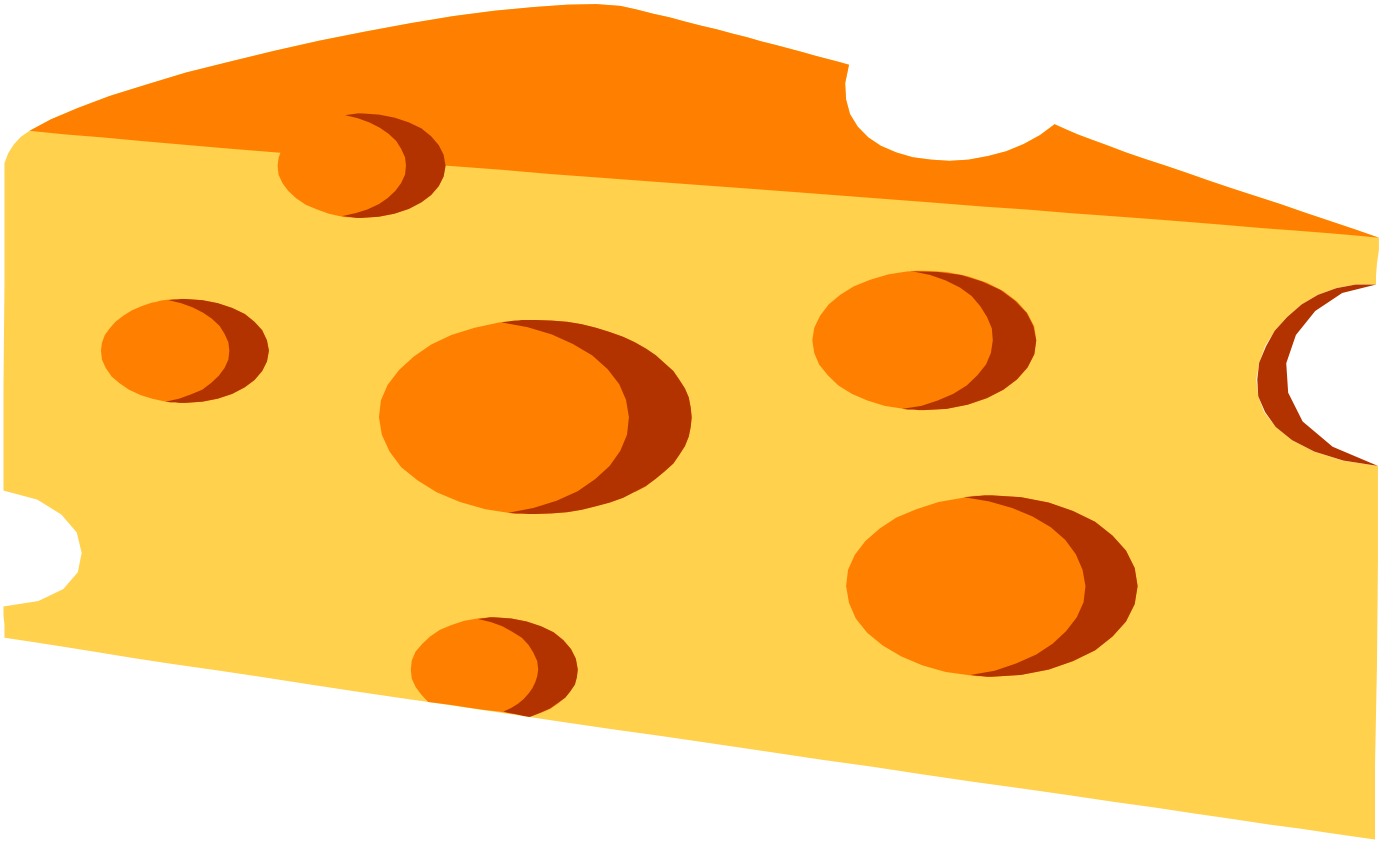
Swiss Cheese Model



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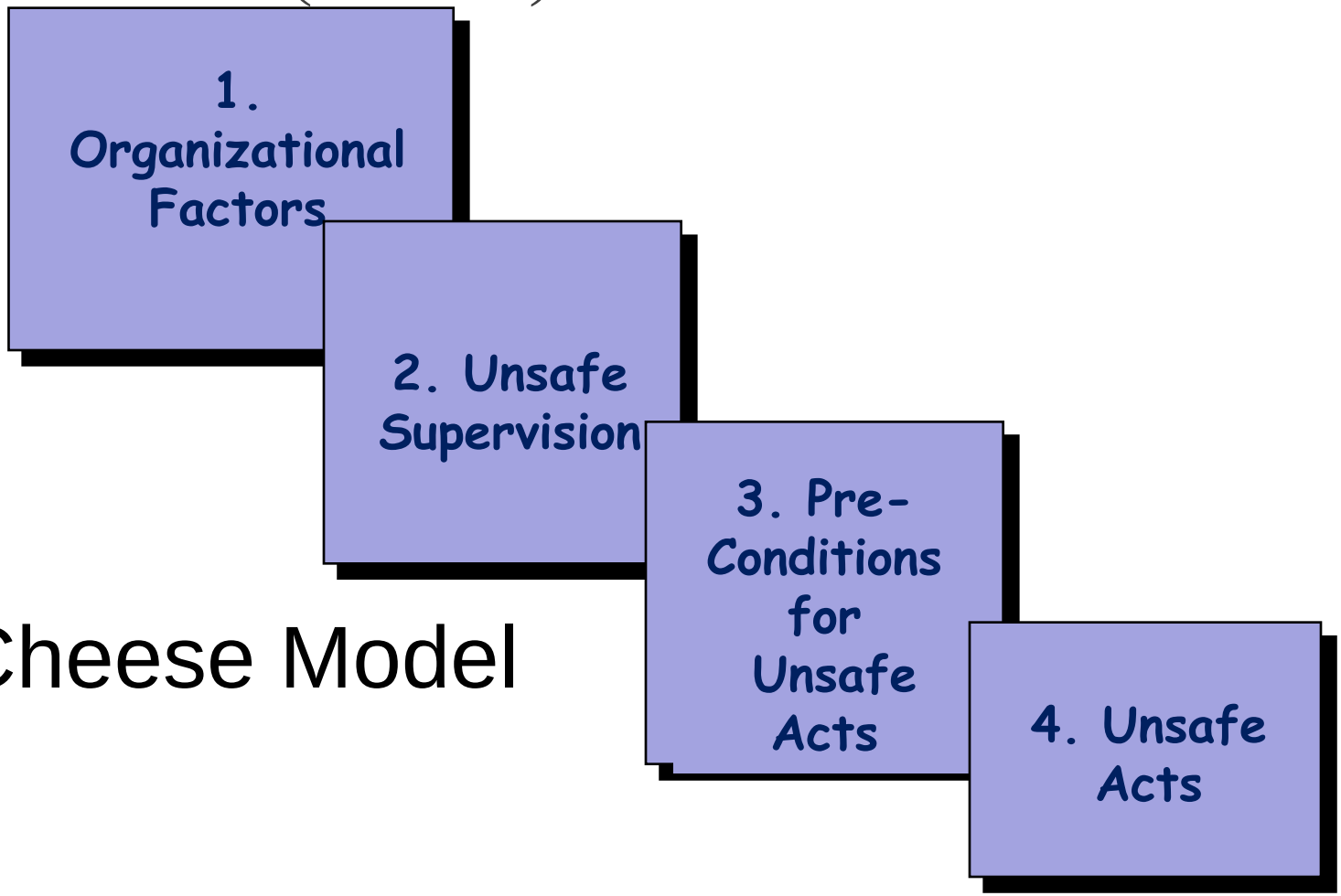
Human Factors Analysis and Classification System (HFACS)



Swiss Cheese Model

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The Swiss Cheese model includes, in the causal sequence of human failures that leads to an accident or an error :

Both;

- **Active failures and;**
- **Latent failures.**

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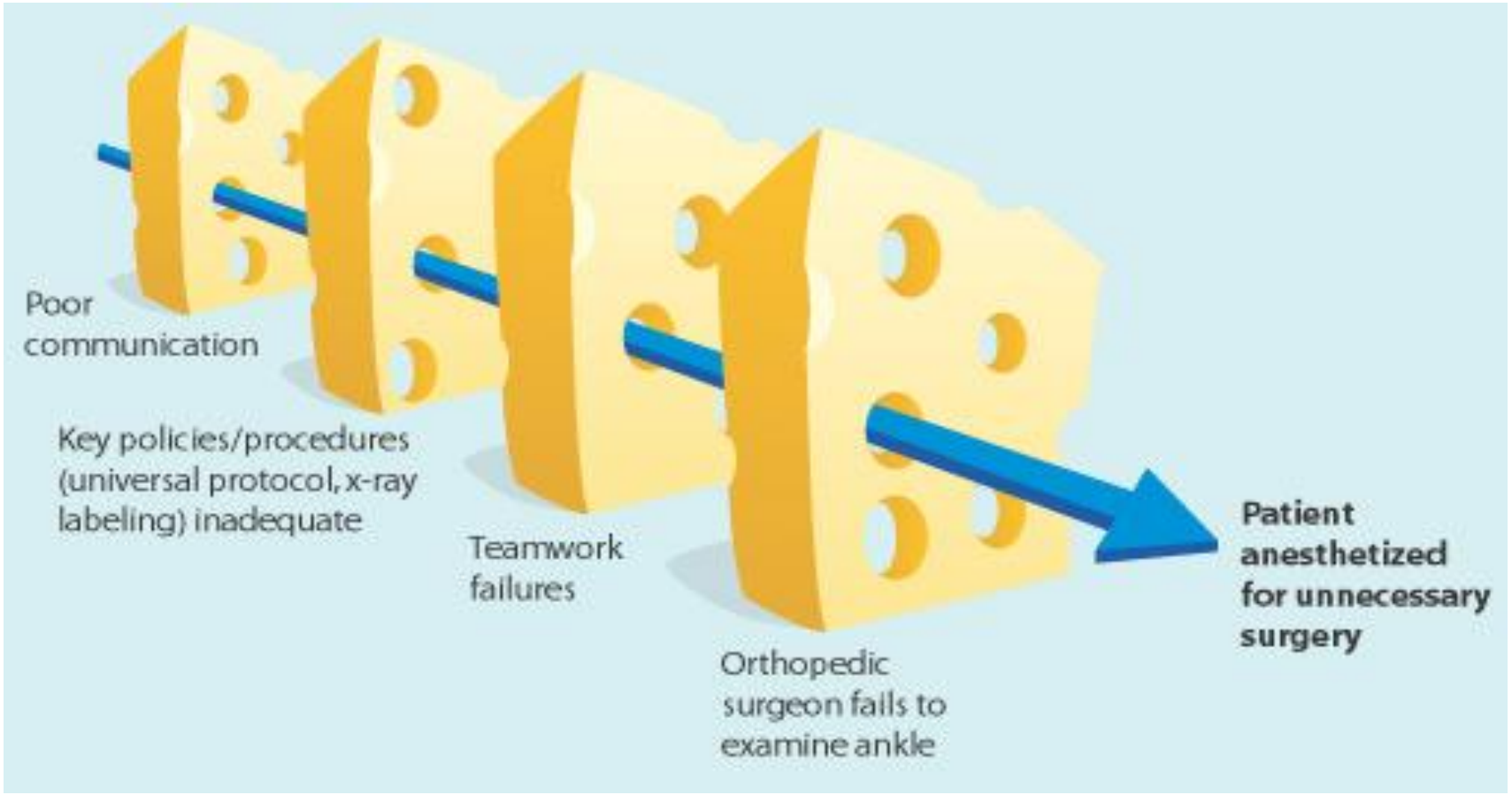
Poor communication
Key policies/procedures (universal protocol, x-ray labeling) inadequate
Teamwork failures
Orthopedic surgeon fails to examine ankle
Patient anesthetized for unnecessary surgery

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Informal assignment 4
(to be sent by MAIL ONLY+ Individual)

Please Read & Demonstrate Briefly :

A . Management Information Systems

B . Control Charts

C. Pareto Chart

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